

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant** : Heinrich Bollmann, et al.  
**Appl. No.** : 09/456,371  
**Filed** : December 8, 1999  
**Title** : COMPOSITE ELEMENTS COMPRISING  
(i) THERMOPLASTIC POLYURETHANES AND  
(ii) MICROCELLULAR POLYURETHANE ELASTOMERS  
  
**Grp./A.U.** : 1794  
**Examiner** : Chang, Victor S.  
  
**Docket No.** : 12010

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**REPLY BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Subsequent to the mailing of an Examiner's Answer on February 20, 2009, Appellants now submit a Reply Brief in response to the Examiner's Answer in accordance with 37 CFR §41.41. Applicants apologize for the length of the Reply Brief, but the Examiner has presented multiple rejections "characterized" as new, even though the Examiner has previously presented these rejections and previously withdrawn these rejections. Further, it is believed that no additional fees are due. However, the Patent Office is authorized to charge or refund any fee deficiency or excess to Deposit Account No. 08-2789.

## **REMARKS**

### ***Prior Submitted Appeal Brief***

Applicant respectfully incorporates herein the Appeal Brief previously submitted on December 5, 2008 for the relevant responses to the Examiner's rejections below.

A1. Whether the specification and drawings and claim 23 are properly rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

A2. Whether claims 19, 20, 22, 23 and 30 are properly rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

A3. Whether claim 23 is properly rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter.

It is noteworthy that the Examiner continues to wrongly state that the specification does not use the terms "rigid" and "flexible" and has never responded to the clear citations provided by the Applicant. In the Appeal Brief submitted on December 5, 2008, Applicant cited to at least six relevant portions of the specification as originally filed for support for these limitations. (See specifically Page 1, Lines 36-37 of the specification as originally filed "It is well known that microcellular polyurethane elastomers can be used as a flexible element replacing the rubber." It is well known that support for matter can be found anywhere in the specification, drawings, or claims.<sup>1</sup> The Examiner wrongly distinguishes the background of the specification from the remainder of the specification as a basis for concluding these terms are not defined.

It is not clear how the Examiner continues to distinguish the "First Interpretation"

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<sup>1</sup> MPEP 2163.06, "...information contained in *any one* of the specification, claims or drawings of the application as filed *may be added to any other part* of the application without introducing new matter" (emphasis added)  
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and “Second Interpretation” of the terms “rigid” and “flexible”. In fact, Applicant contends that throughout prosecution, these terms have not been presented any differently than clearly stated in the specification as originally filed and in response the Examiner’s Office Actions.

On page 6 of the Examiner’s Answer, the Examiner states that Applicant has changed some interpretation of the terms “rigid” and “flexible” which is the basis for the Examiner’s “new” rejections. However, the passage cited by the Examiner does not indicate any such positions and does not change any such interpretations. Applicant submits that the passage indicated by the Examiner, in fact, supports Applicant’s arguments that the same interpretations have been continuously argued throughout prosecution. The Examiner has never articulated a basis for the alleged distinction by the Examiner of the terms “rigid” and “flexible” between “inherent” and “structural”. Applicant has consistently maintained that the rigid thermoplastic polyurethane molding replaced the rigid metal component and the flexible microcellular polyurethane elastomer layer replaced the flexible rubber component.

#### ***RELEVANT PROSECUTION HISTORY FOR “NEW” REJECTION***

Prior to receiving the Examiner’s Answer, on February 10, 2009, for the first time, the Examiner has provided an English translation of French Patent 2559862 to Renzo (hereinafter “Renzo”). The Examiner first relied on Renzo in a Non-Final Office Action dated September 28, 2005, more than three and a half (3.5) years ago. It was not until after the Applicant submitted the subject Appeal Brief on December 5, 2008 that that Examiner considered it important to provide the English translation for supporting the 3.5 year old rejection.

Applicant respectfully submits that this is not a “New” rejection, but is merely

another example of the piece meal examination that this case has received over nearly 10 years, while Applicant has largely maintained the same or similar positions throughout this nearly 10 year period. One example of such examination conduct pertains to rejection A1, above, regarding drawings that the Examiner has previously approved and entered in January 2004 and now, five years later claims are new matter. Applicant has not changed positions in five years on this argument, but the Examiner has “created” some new argument even after the Examiner previously entered the drawings as fully supported, see page 2 of the Office Action dated January 7, 2004, wherein the Examiner stated “the Examiner has carefully considered Applicant’s amendments and remarks”.

Further, it is not clear whether the Examiner is adding one “new” ground of rejection as stated on page 2 of the Examiner’s Answer or four “new” grounds of rejection as stated on pages 6+ of the Examiner’s Answer. For the purposes of this Reply Brief, Applicant has assumed that the Examiner properly set forth four “new” rejections and has assumed the same proper.

### ***RESPONSE TO “NEW” REJECTIONS***

The Examiner has re-presented four prior rejections that were initially presented in the Office Action dated October 3, 2007.

B1. Claims 19, 20, and 22 stand rejected under 35 U.S.C. §103(a) as obvious over Renzo (French Patent 2559862).

B2. Claim 30 is rejected under 35 U.S.C. §103(a) as obvious over Renzo in view of Zeitler et al. (United States Patent No. 5,288,549).

B3. Claim 23 stands rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner contends that nowhere in

the original specification is there support for the structural element “elastomer layer is bonded to an outer surface of said molding.”

B4. Claim 23 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter because the Examiner contends the limitation “elastomer layer is bonded to an outer surface of said molding” is vague and indefinite. Specifically, the Examiner contends that the specification lacks any disclosed structural relationship and that the specification did not include any definition regarding which side is an “outer surface”.

Applicant fully responded on January 2, 2008 to these rejections. Note that “New” rejection B4 is ***IDENTICAL*** to the Examiner’s rejection A3 above. It is not clear why the Examiner has presented ***exactly the same*** rejection as new in the Examiner’s answer, when in fact it is not new. Applicant will conserve space by not addressing this repetitive rejection and respectfully directs the Board’s attention to the Appeal Brief submitted on December 5, 2008 for the pertinent arguments.

*Response to B1*

Applicant respectfully traverses the 35 U.S.C. §103(a) rejection based upon Renzo. When applying 35 U.S.C. §103, the following tenets of patent law *must* be adhered to:

- (A) The claimed invention *must be considered as a whole*;
- (B) The references *must be considered as a whole* and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed *without the benefit of impermissible hindsight* vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is

determined. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

To avoid hindsight, the Examiner must step backward in time and into the shoes worn by the hypothetical “person of ordinary skill in the art” when the invention was unknown and just before it was made. In view of all factual information, the Examiner must then make a determination whether the claimed invention “as a whole” would have been obvious at that time to that person. Knowledge of Applicant’s disclosure must be put aside in reaching this determination. The tendency to resort to “hindsight” based upon Applicant’s disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight *must be avoided* and the legal conclusion *must be reached on the basis of the facts gleaned from the prior art*. See *MPEP §2141*.

Applicant submits that the Examiner is relying on impermissible hindsight to reach a determination of obviousness and there is reasonable expectation of success of the modified reference. If one skilled in the art viewed the reference without impermissible hindsight, the combination is unlikely to have resulted in a composite damping element received in a transverse link, a longitudinal link, a triangular link, a rear-axle subframe, a stabilizer, a spring-strut support, or a shock-absorber.

In addition to the above tenets, to establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed modification and the reasonable expectation of success must both be found in the prior art, and *not based on Applicant’s disclosure*. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants submit that it is not obvious to modify Renzo to arrive at the claimed invention. First, when viewing the claimed invention as a whole, the subject invention claims a replacement for well known metal-rubber damping elements comprising a ***rigid thermoplastic polyurethane molding that supports a flexible microcellular polyurethane elastomer layer*** such that the flexible microcellular layer dampens and absorbs vibrations occurring within the transverse link, the longitudinal link, the triangular link, the rear-axle subframe, the stabilizer, the spring-strut support, or the shock-absorber. When viewing Renzo as whole and without impermissible hindsight, Renzo merely discloses a shock absorber (disclosed as a jounce bumper) to absorb shock formed from a flexible bellow 50 that ***must*** be able to compress and distribute the shock to a cellular elastic 51.

The Examiner has not articulated a reasonable basis and has not explained the reasons one of ordinary skill in the art would have been motivated to modify Renzo to render the claimed invention obvious. The Examiner has merely identified the portions of the claimed elements in Renzo, i.e., a cellular portion and a thermoplastic portion, and relies on impermissible hindsight to argue that Renzo renders the claimed invention obvious.

In fact, the Examiner admits that Renzo does not disclose, teach, or suggest the claimed thickness of the rigid thermoplastic polyurethane molding ***between 2 and 10 mm***. Such limitation provides additional (and unnecessary) support for the term “rigid” as used in the subject application. Since the rigid thermoplastic polyurethane molding supports the flexible microcellular polyurethane elastomer layer, the thickness adds in defining the rigidity of the thermoplastic polyurethane molding.

The Examiner fails to address these limitations even though Applicant has

repeatedly advanced such arguments. If the subject application is viewed as a whole for what it conveys to one of ordinary skill in the art, the disclosure in Renzo would not lead one to develop the claimed invention.

Further, even if one assumes that Renzo could be modified, the modification does not disclose, either expressly or inherently, each and every limitation as claimed in the subject application and the *prima facie* case of obviousness has still not been established. As discussed above, Renzo also does not disclose any composite damping element to dampen and absorb vibrations occurring within the transverse link, the longitudinal link, the triangular link, the rear-axle subframe, the stabilizer, the spring-strut support, or the shock-absorber.

The Examiner contends that Renzo and the subject application are the same end use. Again, this mere conclusion views the subject application and Renzo with impermissible hindsight. The subject invention is a composite damping element that may be used in a shock absorber, whereas Renzo is a jounce bumper that is a shock absorber.

Renzo discloses that the bellow 50 must be flexible in order to absorb shocks. If the bellow 50 included a rigid thermoplastic polyurethane molding *between 2 and 10 mm*, then the bellow 50 would not be compressible and would not be able to absorb shock as required by Renzo. Therefore, Renzo teaches away from forming the bellow 50 from a rigid material, since Renzo requires compression.

#### *Impermissible Use of Hindsight*

The use of hindsight is not permissible when making an obviousness determination. The CAFC stated,

Determination of obviousness can not be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the



patented invention. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in the way they were combined by the inventor. See Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Inc., 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed.Cir. 1994) (“When the patented invention is made by combining known components to achieve a new system, the prior art must provide a suggestion or motivation to make such a combination.”); Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 935, 15 USPQ2d 1321, 1324 (Fed.Cir. 1990) (the prior art must suggest to one of ordinary skill in the art the desirability of the claimed composition); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed.Cir. 1985).” ATD Corp. v. Lydall, Inc., 159 F.3d 534, 546, 48 USPQ2d 1321, 1329 (Fed. Cir. 1998). (attached as Exhibit D.)

It is respectfully submitted that the modification of Renzo employs impermissible hindsight and does not consider the claimed invention as a whole. In other words, the claimed invention is being analyzed element by element as a roadmap to find the prior art components and the Examiner is discounting the value of modifying these elements in a new way to achieve a new result.

In the subject invention, the novel and unique composite damping element provides for a replacement for prior metal-rubber damping elements. One skilled in the art confronted with the problem facing the inventor, namely to develop a replacement for metal-rubber damping elements, would not be motivated to modify the teachings Renzo without a reasonable and articulated basis, which is lacking.

As such, even when modified, Renzo fails to disclose, teach, or suggest each and every limitation of the claimed invention. In view of the above, the 35 U.S.C. §103 rejection should be withdrawn.

#### Response to B2

First, claim 30 depends from claim 19 and for the reasons set forth above, claim 19

is believed to be allowable. Thus, claim 30 is allowable. Second, Applicant is compelled to respond to the Examiner's improper rejection combining Zeitler with Rezn. Note that Zeitler was originally relied upon in an Office Action dated July 14, 2002, almost 7 years ago.

Zeitler is directed towards use of a composite element in dashboards that are not to be continuously and repeatedly compressed. The composite element dashboard is located in the interior of the passenger compartment. The cellular polyurethane acts as a noise damping element to reduce noise from the engine and as a cushioning element in the rare instance when a force is exerted against the surface of the dashboard. The molding, or skin, in Zeitler improves the dashboard's aesthetic properties and encloses the cellular polyurethane to conceal it from the occupant. The skin is not used to allow the dashboard to be attached in the interior of the passenger compartment.

The subject invention, on the other hand, is a composite damping element having both the rigid thermoplastic polyurethane molding and the flexible microcellular polyurethane elastomer layer. The molding serves to position the elastomer layer relative to and in one of a transverse link, a rear-axle subframe, a stabilizer, a longitudinal link, a spring-strut support, a shock-absorber, and triangular link. It would not be obvious to combine a base layer of an interior dashboard with an element in a jounce bumper as disclosed in Renzo. The type of noise and vibration being dampened by the dashboard is not the equivalent type of shock and vibration being dampened by the jounce bumper and the base layer in the dashboard does not serve the purpose of the rigid thermoplastic polyurethane molding in the subject invention.

Therefore, one of ordinary skill in the art would not combine these references to

arrive at the subject invention. The dashboard is directed to preventing engine noise from being heard by the occupants and serves as a secondary cushioning element, if necessary. The jounce bumper of Renzo is continuously and repeatedly compressed. Noise and vibration damping is not equivalent to shock and vibration damping, nor is it an obvious variation. One skilled in the art of shock and vibration damping systems for the running gear of an engine would not look to interior dashboard systems.

Further, the Examiner states that Zeitler et al. discloses a ratio of isocyanate groups to hydroxyl groups range of from 0.85:1 to 1.1:1 for adding rigidity to the base layer. Thus, Zeitler et al. teaches forming the base layer without an excess of isocyanate groups and does not disclose bonding the microcellular polyurethane elastomer layer in direct contact therewith. In other words, Zeitler et al. teaches away from the subject invention of having an excess of isocyanate reactive groups and bonding the microcellular polyurethane elastomer layer in direct contact therewith. Accordingly, the 35 U.S.C. §103 rejection is believed to be overcome.

### Response to B3

Referring to B3 directed toward the §112 rejections of claim 23, importantly, the Examiner has failed to articulate a basis as to why the prior (and continual) citations to support in the specification were originally adequate and now no longer adequate.<sup>2</sup> As a result of this failure, Applicant has not been able to fully address the rejections and as such requires the Board's attention.

Claims 22 and 23 were added on September 4, 2001 and entered by Examiner Roche

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<sup>2</sup> See page 4 of the Examiner's Answer, Examiner Chang states "upon a careful review since the amended specification and drawing filed 11/17/2003 are unsupported in the original specification", but fails to indicate what was reviewed or why the prior support is no longer adequate. This is a mere conclusion not supported by facts.

without any objections or rejections under §112. Claims 22 and 23 are similar in that both claim a bonding site of a flexible microcellular elastomer layer relative to a surface of a rigid thermoplastic polyurethane molding. Furthermore, Examiner Roche issued 2 subsequent office actions without rejecting claim 23 on this basis, Supervisory Patent Examiner Terrel Morris issued 1 subsequent office action without rejecting claim 23 on this basis, and Examiner Chang issued 3 subsequent office actions without rejecting claim 23 on this basis. It was more than four years after being entered, on September 28, 2005, and after 6 subsequent office actions, that Examiner Chang, for the first time, rejected claim 23 under §112.

Previously, Examiner Chang entered Figures 1-3 as part of the specification in his Office Action dated January 7, 2004. It is well established that the figures form a part of that application as set forth in the Manual of Patent Examination Procedure (MPEP) §2163.06<sup>3</sup>. Figures 1-3 merely illustrate well known motor vehicle composite damping elements that, in accordance with the subject invention, are formed from the flexible microcellular elastomer layer being bonded to and in direct contact with at least one surface of the rigid thermoplastic polyurethane molding.

Applicant directs the Board to pages 12-15 of the Appeal Brief submitted December 5, 2008 for a detailed discussion of the “outer surface” limitation. To summarize, Applicant submits that it is the bonding between the TPU molding and elastomer layer that improves upon the well-known metal-rubber damping elements and not specifically the orientation of the TPU molding and elastomer layer. The subject application describes test specimens formed to perform the necessary tests. The orientation and configuration of the composite

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<sup>3</sup> See Footnote 1.  
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damping elements are dependent upon the particular application. Whichever specific configuration is used, i.e., inner surface of the molding or outer surface of the molding, the claimed flexible microcellular polyurethane elastomer layer is being chemically bonded to and in direct contact with at least one surface of the rigid thermoplastic polyurethane molding and it is believed that this interface is what provides the desired performance of the damping element. Since one of ordinary skill in the art would expect the rigid thermoplastic polyurethane molding to comprise multiple surfaces, the subject application reasonably conveyed to the one of ordinary skill in the relevant art that the flexible microcellular polyurethane elastomer layer is bonded to these surfaces. In view of Applicant's previously submitted remarks, it is submitted that the §112 first paragraph rejection, should be withdrawn.

The Commissioner is authorized to charge the Deposit Account No. 08-2789, in the name of Howard & Howard Attorneys, P.C. for any additional fees or credit the account for any overpayment.

**Respectfully submitted,**

HOWARD & HOWARD ATTORNEYS PLLC

April 20, 2009

**Date**

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